

# Professional activity

## *How is family physicians' work time changing?*

Christel A. Woodward, PHD Barbara Ferrier, PHD May Cohen, MD, CCFP, FCFP Judy Brown, MA

### ABSTRACT

**OBJECTIVE** To examine hours worked professionally, work preferences, and changes in both of these and their correlates.

**DESIGN** Repeated surveys done in 1993 and 1999.

**SETTING** Ontario family practices.

**PARTICIPANTS** Cohort of physicians certified in family medicine between 1989 and 1991 after family medicine residency who were surveyed in 1993 when they resided in Ontario.

**MAIN OUTCOME MEASURES** Self-reported hours spent weekly on professional activities, desired hours of professional work, and balance between work and other activities.

**RESULTS** Fifty-three percent (293) of 553 physicians responded to the 1999 survey; 91% had remained family physicians; 85% of these had participated in the 1993 survey. The difference between the hours that family physicians preferred to work professionally and their actual hours of work had increased since 1993. Childless physicians, women physicians with preschool children, and women physicians married to other physicians worked fewer hours professionally than other physicians in 1999. Female physicians and physicians without children worked closer to their preferred hours than other physicians. Reporting a preference to work fewer hours professionally in 1993 was linked with a reduction in professional activities by 1999.

**CONCLUSION** Greater attention should be paid in physician resource planning to the family life cycle of female physicians. Lifestyle changes could lead to a reduction in professional activity among these physicians.

### RÉSUMÉ

**OBJECTIF** Examiner les heures de travail professionnel, les préférences à l'égard du travail ainsi que les changements et les corrélations entre les deux.

**CONCEPTION** Des sondages répétés en 1993 et en 1999.

**CONTEXTE** Des pratiques familiales en Ontario.

**PARTICIPANTS** Une cohorte de médecins de famille certifiés entre 1989 et 1991 après une résidence en médecine familiale auprès desquels un sondage a été réalisé en 1993 alors qu'ils résidaient en Ontario.

**PRINCIPALES MESURES DES RÉSULTATS** Les heures de travail à des activités professionnelles telles que rapportées par les intéressés, les heures de travail professionnel souhaitées et l'équilibre entre le travail et les autres activités.

**RÉSULTATS** Le taux de réponse au sondage de 1999 était de 53% (293) des 553 médecins; 91% pratiquaient toujours la médecine familiale; 85% avaient participé au sondage de 1993. L'écart entre les heures préférées et les heures réelles de travail professionnel s'est élargi depuis 1993. Les médecins sans enfant, les femmes médecins avec des enfants d'âge préscolaire et celles mariées à un autre médecin travaillaient moins d'heures sur le plan professionnel que les autres médecins en 1999. Les heures de travail réelles des femmes médecins et des médecins sans enfant se rapprochaient davantage de leurs préférences par rapport aux autres médecins. Il existait une association entre le rapport d'une préférence de travailler moins d'heures sur le plan professionnel en 1993 et une réduction des activités professionnelles en 1999.

**CONCLUSION** La planification des effectifs médicaux devrait tenir compte davantage du cycle de vie familial des femmes médecins. Les modifications au style de vie pourraient se traduire par une réduction des activités professionnelles chez ces médecins.

*This article has been peer reviewed.*

*Cet article a fait l'objet d'une évaluation externe.*

*Can Fam Physician 2001;47:1414-1421.*

**P**hysician supply is often measured by the numbers of physicians available and the hours they spend on professional activities or number of services they bill.<sup>1</sup> These last two measures can be viewed as surrogate measures for productivity, which is best measured by examining how physicians' activities affect the quality of care delivered to patients and the health outcomes achieved. Unfortunately, to date, our health information systems do not provide us with tools to measure health outcomes.

To understand the "supply side" of physician resources for planning purposes, it is important to monitor the number of physicians and hours of professional activity or number of services they provide. If hours and number of services decrease, more physicians will be needed to replace the existing stock, even if the actual number of physicians does not decrease.

Two societal trends influence physician supply. Since the mid-1990s, about half of newly enrolled medical students have been women.<sup>2</sup> Although women comprised 30.8% of Ontario's primary care physician work force in 1997,<sup>3</sup> they will be half of that work force by 2020. Several factors have been implicated as potentially responsible for the observed difference between male and female physicians' professional activity. Having children at home,<sup>4,5</sup> number of children at home,<sup>6</sup> and having preschool<sup>4</sup> children at home have been shown by cross-sectional data to be inversely related to hours worked professionally by women physicians. A second trend is to place greater emphasis on healthy living. It is unclear whether younger physicians will continue to put in the long hours that have historically been associated with being a physician.<sup>7</sup> Concern about achieving a better balance between work and other activities was noted in our 1993 study of a cohort of primary care physicians early in their careers.<sup>4,8</sup>

This paper reports the hours worked professionally in 1999 by members of this cohort. It examines changes since 1993 in hours worked professionally for cohort members who have remained family physicians, and compares changes in preferred hours of work and professional working hours over time. It then examines the extent to which some characteristics of these

.....  
**Dr Woodward** is a Professor and **Ms Brown** is a Research Associate in the Department of Clinical Epidemiology and Biostatistics, **Dr Cohen** is Professor Emeritus in the Department of Family Medicine, and **Dr Ferrier** is Professor Emeritus in the Department of Biochemistry, all at McMaster University in Hamilton, Ont.

physicians' practices and of their personal situations help explain the observed variation in hours of professional activity per week reported and the extent of the gap between preferred hours of professional activity and actual hours reported.

## METHODS

In January 1999, a survey was sent to all members of a cohort of physicians first studied in 1993. To be eligible for cohort membership, physicians had to be certified by the College of Family Physicians of Canada between 1989 and 1991 after completing a family medicine residency and to have resided in Ontario in 1993. A thank-you or reminder note, two subsequent mailings, and telephone calls to nonrespondents in Ontario were used to increase the response rate. The study was approved by the Committee for Ethics for Research in McMaster University's Faculty of Health Sciences.

The questionnaire requested information about physicians' current status in medicine; those who remained family physicians were asked about their practice type and activities. All were asked how many hours weekly they spent on professional activities (excluding on-call stints) and were asked to estimate the percentage of professional time they devoted to direct and indirect patient care, managing their practices, other administrative activities, research, teaching, and other activities. Physicians indicated whether they participated in on-call responsibilities. As well, information was gathered on marital status, occupations of their spouses or partners, the extent to which spouses or partners were involved in the work force outside the home, whether children resided at home and the ages of these children, and the perceived adequacy of the balance between professional and other responsibilities. Analyses in this paper are based on information from the group of respondents who had remained family physicians (91%).

Data were checked for coding errors by double data entry of a 10% sample of the data and visual inspection of the data for out-of-range responses. Categorical data were summarized using frequency distributions, and means and standard deviations were computed for ordinal and interval data. Bivariable analyses, using either  $\chi^2$  analysis or analysis of variance (ANOVA), were done by sex for other sociodemographic variables and for variables assessing hours worked in 1999 in various activities. Variables associated with changes over time in hours worked professionally were examined using repeated-measures ANOVA.

**Table 1.** Description of 293 respondents: *The sex of one physician was unspecified.*

RESPONDENT CHARACTERISTICS	MALE		FEMALE		TOTAL	
	N	%	N	%	N	%
FIELD OF MEDICINE						
• Family medicine	113	89.6	153	92.2	266	91.1
• Specialist	10	7.9	13	7.8	23	7.9
• Left medicine	3	2.4	0	0	3	1.0
ON-CALL RESPONSIBILITIES (EXCLUDING OBSTETRICS)*						
• Yes	82	74.5	99	65.6	181	69.3
SEX*	113	42.3	153	57.3	266	100.0
MARITAL STATUS*						
• Spouse or partner	103	91.2	131	86.8	234	88.6
• Single	10	8.8	11	7.3	21	8.0
• Separated, divorced, or widowed	0	0	9	6.0	9	3.4
NATURE OF SPOUSE'S WORK*†						
• Physician	21	25.6	39	29.1	60	27.8
• Other health professional	17	20.7	4	3.0	21	9.7
• Other professional	30	36.6	61	45.5	91	42.1
• Other occupation	14	17.1	30	22.4	44	20.4
EXTENT OF SPOUSE'S WORK OUTSIDE THE HOME*†						
• Employed full time or trainee	34	33.0	104	76.5	138	57.7
• Employed part time	34	33.0	17	12.5	51	21.3
• Employed occasionally	7	6.8	4	2.9	11	4.6
• Not employed	28	27.2	11	8.1	39	16.3
LOCATION*						
• Urban Canada	94	83.2	136	88.9	230	86.5
• Rural Canada	13	11.5	7	4.6	20	7.5
• Outside Canada	6	5.3	10	6.5	16	6.0

\*Restricted to family physicians

†Significant difference by sex ( $\chi^2$  test).

We used regression analysis to examine the ability of factors related to current medical field, sex, presence and age of children, partner's occupation, and location of practice to explain hours worked professionally in 1999, the difference between hours weekly that physicians reported working professionally, and hours per week they would prefer to work professionally in 1999.

## RESULTS

Two hundred ninety-three physicians (53%) responded to the survey. Most (91%) indicated that they were still practising family medicine in early 1999 (Table 1). Of these, 85% had also responded to the 1993 survey, and these physicians are the focus of the analysis presented.

More than half (57%) the family physicians were women, and most (89%) were married or living with a partner. Among those with a spouse or partner, occupation of spouse varied by sex. Male physicians were more likely to be married to other health professionals than to female physicians, while women physicians were more likely to have spouses or partners who were professionals in other fields ( $\chi^2_3 = 8.37, P < .001$ ). Women were more likely to have spouses or partners who worked full time outside the home; men were more likely to have spouses who worked part time or occasionally, or were not employed outside the home ( $\chi^2_4 = 45.79, P < .001$ ). Most respondents were in Canadian cities, and 70% participated in on-call arrangements.

Whether or not physicians had children and age of youngest child were associated with differences

**Table 2. Relationship between presence of children and their ages and hours family physicians spent weekly on professional activities in 1993 and 1999**

CHILDREN AND AGE OF YOUNGEST CHILD (FAMILY CONSTELLATION)*	HOURS PER WEEK SPENT ON PROFESSIONAL ACTIVITY									
	N	1993 FEMALE PHYSICIANS†		1999 FEMALE PHYSICIANS†		N	1993 MALE PHYSICIANS†		1999 MALE PHYSICIANS†	
		MEAN	SD	MEAN	SD		MEAN	SD	MEAN	SD
No children	23	45.6	14.3	41.7	15.9	17	47.1	13.7	40.4	14.0
Child younger than 6 in 1999 only	35	44.6	9.0	35.2	11.8	23	49.1	10.1	48.1	11.9
Child younger than 6 in 1993 only	13	39.5	11.5	48.5	12.6	13	51.2	8.4	52.1	6.5
Child younger than 6 in both 1993 and 1999	41	33.3	11.6	33.1	12.8	37	48.3	9.3	51.2	13.4
Children but no child younger than 6 in 1993 and 1999	7	45.9	14.7	45.4	12.3	4	48.2	6.2	45.0	10.8
TOTAL	119	40.4	12.7	37.8	14.0	94	48.7	10.1	48.4	12.8

Repeated measures ANOVA for main effect (difference between groups by sex):

†F = 14.47 (df 1,203) P < .001; difference between groups by sex at each time.

Significant interactions:

\*F = 4.71 (df 4,203) P = .001; family constellation influences change in hours of professional activity for individuals across time.

\*\*F = 5.00 (df 4,203) P = .001; interaction between sex and family constellation at each time.

**Table 3. Comparison of actual and preferred hours of professional activities of family physicians who participated in the 1993 and 1999 surveys**

HOURS OF PROFESSIONAL ACTIVITIES	N	1993		1999		DIFFERENCE 1999-1993	
		MEAN	SD	MEAN	SD	MEAN	SD
HOURS WORKED*							
• Male physicians	98	48.7	10.8	47.9	13.1	-.84	13.2
• Female physicians	115	40.1	12.2	37.9	14.0	-2.30	13.5
• TOTAL	213	44.1	12.3	42.3	14.4	-1.60	13.4
PREFERRED HOURS†							
• Male physicians	97	40.3	7.7	37.2	9.3	-3.1	8.7
• Female physicians	111	34.7	9.2	31.0	10.3	-3.7	9.7
• TOTAL	208	37.3	8.9	33.9	10.3	-3.4	9.3

\*F = 2.83 (df 1,211) P = .094 difference in hours worked in 1993 and 1999.

F = 40.00 (df 1,211) P < .001 women worked fewer hours in each period.

†F = 27.93 (df 1,206) P < .001 difference in preferred hours of work in 1993 and 1999.

F = 27.85 (df 1,206) P < .001 women have preferred fewer hours than men in each period.

in hours per week worked professionally in 1993 and 1999. Women worked fewer hours professionally while their children were not yet in school (Table 2). Women who had no children in 1993 but had young children in 1999 reduced their work hours between 1993 and 1999; women whose youngest child was younger than 6 years in 1993 but was school-aged by 1999 increased their hours. Having preschool-aged children in both 1993 and 1999 was associated with fewest hours of professional activity. For men, the pattern was somewhat different; men who remained

childless reduced their working hours between 1993 and 1999. Age of youngest child was unimportant in predicting changes in time men worked.

Although hours worked professionally did not change significantly between 1993 and 1999 (Table 3), hours that these physicians preferred to work decreased significantly. On average, physicians indicated they would prefer to work 37 hours weekly in 1993 and now report they would like to work about 34 hours weekly. Thus, the gap between hours of professional activity and preferred hours widened over time.

**Table 4. Predictors of hours worked professionally in 1999**

PHYSICIAN CHARACTERISTICS	STANDARDIZED $\beta$	<i>t</i>	SIGNIFICANCE
Specializing within family medicine	-0.091	-1.61	.109
Female	0.046	0.48	.632
Spouse or partner working full time	-0.041	-0.66	.512
Child younger than 6 years	-0.01	-0.05	.958
No children	-0.189	-2.51	.013
Spouse or partner is a physician	0.068	0.73	.466
Rural practice area	0.085	1.49	.138
Female and child younger than 6 years	-0.38	-3.27	.001
Female and spouse is a physician	-0.263	-2.67	.008

$F = 8.67$  (9,245)  $P < .001$ ; adjusted  $R^2 = .214$ .

Three variables were important in predicting hours worked professionally in 1999 and explained 21% of the variance observed in professional hours (**Table 4**). Physicians without children at home (mean = 42.6 hours, SD = 16.4) and female physicians who had preschool children (mean 35.9, SD = 13.0) or who had a physician partner (mean = 32.6 hours, SD = 12.6) worked fewer hours professionally than other physicians. Slightly different variables were related to having professional work hours that were close to preferred hours in 1999. Physicians without children (standardized  $\beta = -.237$ ,  $t = -2.83$ ,  $P = .005$ ) and women physicians (standardized  $\beta = .151$ ,  $t = -2.25$ ,  $P = .026$ ) were significantly more likely than other physicians to have professional work hours that were close to their preferred hours of weekly professional activity, although only 4% of the variance could be explained.

Four variables were significantly associated with changes in hours of professional activity in 1993 and 1999. Preferring fewer hours of professional activity in 1993 was linked with a reduction in professional hours by 1999 (standardized  $\beta = .56$ ,  $t = 7.77$ ,  $P < .001$ ) while preferring to work fewer hours professionally in 1999 was negatively associated with a reduction in hours worked between 1993 and 1999 (standardized  $\beta = -.61$ ,  $t = 8.58$ ,  $P < .001$ ). Physicians who reported that the balance between their personal and professional lives

was not good in 1993 were significantly more likely than those who thought it was good to have decreased hours of professional activities by 1999 (standardized  $\beta = -.21$ ,  $t = 3.68$ ,  $P < .001$ ). Those who reported the balance between work and personal life was just right in 1999 decreased their professional activities between 1993 and 1999 (standardized  $\beta = .20$ ,  $t = 3.35$ ,  $P = .001$ ) significantly more than those who reported the balance was not good in 1999. No other variable describing personal or professional status was important.

The importance of physicians' assessments of balance and preferred hours in predicting changes in hours of professional activity is illustrated in **Table 5**. Physicians who thought the balance between their work and family lives was about right in both 1993 and 1999 worked 35 hours a week in 1993 and 33 hours a week in 1999. Those who had thought the balance was right in 1993 but did not think so in 1999 had increased the time they spent on professional activities. Physicians who thought that the balance between home and work was not good at either date worked the longest hours (48 hours in 1993 and 47 hours in 1999), while physicians who thought the balance was now good but had not been in 1993 reported working 10 hours less in 1999 than they had in 1993. Similarly, physicians who had worked longer on professional activities than they preferred in 1993 had curtailed their professional activities an average of 8 hours by 1999; those who worked less than they preferred had increased their activity by 3 hours. Similar patterns are seen for both men and women physicians, although women worked fewer hours than men.

No significant difference was seen between 1993 and 1999 in the percentage of professional time physicians spent on direct and indirect patient care versus other professional activities, such as practice management, other administrative and teaching responsibilities, and other activities.

## DISCUSSION

Although most family physicians work longer hours per week professionally than the average Canadian worker,<sup>9</sup> their professional activity hours are similar to other highly educated workers (who tend to work longer hours than the average worker). Within the educated worker group, an increasing polarization of usual weekly hours worked has been reported, with more working both less than and more than the 35- to 40-hour standard.<sup>10</sup> This disparity is also seen among physicians; the variation in hours worked increased somewhat since 1993. Surveys of the labour

**Table 5. Family physicians' hours of professional activity in 1993 and 1999 by sex and preferences**

		HOURS PER WEEK WORKED PROFESSIONALLY													
		1993 MALE PHYSICIANS		1999 MALE PHYSICIANS		1993 FEMALE PHYSICIANS		1999 FEMALE PHYSICIANS		TOTAL 1993		TOTAL 1999			
PHYSICIAN RESPONSES	N	MEAN	SD	MEAN	SD	N	MEAN	SD	MEAN	SD	N	MEAN	SD	MEAN	SD
BALANCE BETWEEN PERSONAL AND PROFESSIONAL LIFE ABOUT RIGHT															
IN 1993 IN 1999															
No No	53	51.8	8.1	51.5	11.6	50	44.9	12.9	42.4	14.4	103	48.4	11.2	47.1	13.8
No Yes	11	51.5	10.3	37.7	9.3	18	41.2	8.9	33.3	11.1	29	45.1	10.6	35.0	10.5
Yes No	22	44.2	8.3	49.9	10.5	28	36.6	8.5	37.9	14.4	50	39.9	9.1	43.2	14.0
Yes Yes	8	36.6	14.0	38.0	18.2	23	34.8	15.7	31.3	11.3	31	35.3	15.2	33.0	13.4
DIFFERENCE BETWEEN ACTUAL AND PREFERRED HOURS OF PROFESSIONAL ACTIVITY (1993)															
10 to 0	28	40.6	8.3	44.9	9.7	42	32.9	8.6	35.4	13.3	70	36.0	9.3	39.2	12.8
1 to 5	18	46.5	9.8	50.6	16.0	23	36.7	11.9	35.8	11.3	41	41.0	12.0	42.3	15.3
5 to 10	20	50.2	5.4	47.9	13.5	34	45.2	8.7	40.6	13.9	54	47.0	8.0	43.3	14.1
>10	28	57.1	7.2	50.8	12.4	17	56.1	11.9	43.7	15.8	45	56.7	9.1	48.1	14.1

force, however, provide no explanation for variations observed. Being childless, or being a female physician with a physician as a spouse or with a child younger than 6, reduced the hours devoted to professional activity among family physicians studied.

Hours worked professionally (excluding on-call duties) by these family physicians decreased slightly since they were first surveyed in 1993. It is difficult to assess the importance of this decrease for human resource planning. Some of the decrease appeared to occur because more women became parents with young children; these physicians might increase their hours again later. It is possible that the decrease in hours of professional activity was accompanied by increased efficiency (if these physicians are able to accomplish as much in less time) as their experience has grown. The decrease in work hours observed is consistent with cross-sectional data from surveys of physicians done by the Canadian Medical Association (CMA), and the hours worked by men and women are consistent with those reported by physicians in general.<sup>11</sup> (The 1997 to 1999 CMA survey data are not directly comparable to earlier data because the way the question was posed changed.)<sup>12</sup>

Also noteworthy is that these physicians' preferred hours of work have decreased more since 1993 so that the difference between actual and preferred hours

increased. Less difference between professional and preferred hours was associated with greater professional satisfaction.<sup>13</sup> Physicians whose hours of professional activity were much greater than their preferred professional hours in 1993 were more likely to reduce their practice time by 1999. This suggests that some physicians might wish to reduce their professional activities further. Most work more than 40 hours professionally, and on-call time must still be added to the total. Seventy percent of these physicians are involved in on-call arrangements.

In the 1999 survey, family physicians reported being less satisfied professionally than they had been in 1993,<sup>13</sup> and more than 90% thought that medical practice had become more stressful.<sup>14</sup> (Reasons associated with these findings are presented elsewhere.<sup>13,14</sup>) In the intervening years, society has paid greater attention to importance of lifestyle issues to good health. People, and especially physicians, are increasingly aware of the ill effects of stress and of long work hours.<sup>15-18</sup>

Family physicians who thought they had achieved a good balance between work and personal commitments were working about 35 hours per week professionally in 1999 and worked closer to their preferred hours of professional activity than others. They could have made deliberate lifestyle choices to limit their

## RESEARCH

### Professional activity

#### Editor's key points

- This cohort of family physicians, newly qualified in 1993, changed their hours of professional work by 1999.
- Family physicians who were childless and women who were married to other physicians or had children younger than 6 years were less likely to work as many hours as men.
- The gap between hours worked and preferred hours of work was larger in 1999 than in 1993.
- Reporting a preference to work fewer hours in 1993 was associated with reduced work hours by 1999.
- Health planners should keep in mind the growing tendency to pay attention to lifestyle issues by reducing work hours and the reduced professional activities of family physician mothers with young children.

#### Points de repère du rédacteur

- Les médecins de famille de cette cohorte, tout récemment certifiés en 1993, avaient changé leurs heures de travail professionnel en 1999.
- Les médecins de famille sans enfant et les femmes mariées à un autre médecin ou ayant des enfants de moins de six ans étaient davantage susceptibles de travailler moins d'heures que les hommes médecins.
- Il y avait un plus grand écart en 1999 qu'en 1993 entre les heures préférées et les heures réelles.
- La préférence de travailler moins d'heures en 1993 était associée à une réduction des heures de travail en 1999.
- Les planificateurs dans le domaine de la santé devraient tenir compte de la tendance grandissante des femmes médecins de famille avec de jeunes enfants à se préoccuper des questions entourant le style de vie en réduisant leurs heures de travail et leurs activités professionnelles.

professional activities. Physicians without children were overrepresented in this group and worked significantly fewer hours than physicians with children. Recently, Barnett and colleagues<sup>19</sup> reported that physicians whose professional work hours were either less or more than they (and their spouses or partners) preferred were more likely to experience burnout, as burnout is dependent on how well the work schedule meets the needs of the worker, his or her partner, and their children.

By 1999, when more women had all children at school, being female in itself did not contribute significantly to explaining differences in hours of professional work, as it had previously. Instead, the age of

youngest child of female physicians was an important factor. After all their children were in school, these women increased their hours of professional activity. Recent information from the 1999 CMA physician survey, which provides cross-sectional data, also indicates that female physicians with preschool children work shorter hours professionally than women with school-aged children.<sup>12</sup> These findings suggest that the extent to which medical human resources planners discount women's contribution to the resource pool should change as their families grow up.

A strength of this study is that the same questions were posed to physicians and the same physicians were studied at two points in time when their family and professional circumstances often differed. However, this study also has several limitations. As with most cohort studies, the response rate to the second survey was lower than the response rate to the first survey. Yet those who responded to both surveys appear very similar to those who responded only once. It would have been useful to include a question about the amount of vacation time taken during a typical year. We do not know what the average length of vacations per year is for these physicians, whether this differs by sex or other factors, or whether it has changed over time. Changes in vacation time could also affect the total time spent on professional activities, potentially as much as changes in the usual time spent per week. The on-call schedules of physicians studied varied greatly and were difficult to quantify in a meaningful fashion, as on-call duty can occur several times a week or only once every few months. Thus, the hours of professional activity reported excluded on-call time. This again is a study limitation.

We thought that physician couples and physicians with spouses who work full time might work closer to their preferred hours. In neither case did our findings support these hypotheses. A recent survey of randomly selected physicians who graduated from two US medical schools between 1980 and 1990 also found that, while female physicians in dual-doctor families worked fewer hours than female physicians married to nonphysicians, hours worked by male physicians did not differ according to whether they were married to physicians.<sup>20</sup> Thus, these findings could be generalizable beyond this cohort.

## CONCLUSION

The growing tendency among family physicians to pay more attention to lifestyle issues, and the increase in the discrepancy between hours worked professionally and

preferred hours, have implications for human resource planning for primary care. As well, the change in hours of professional activity among female family physicians at differing stages of their families' life cycle needs to be considered if we are to achieve greater accuracy in supply-side forecasts. ♦

# Acknowledgment

*We thank the physicians who participated in this study. This study was funded by Health Canada's National Health Research and Development Program and by the Social Sciences Humanities Research Council of Canada.*

# Contributors

**Drs Woodward, Ferrier, and Cohen** conceived the research project. **Ms Brown** helped develop the analytic strategy. **Dr Woodward** was responsible for writing the first draft of the paper. All of the authors contributed to subsequent revisions.

# Competing interests

*None declared*

**Correspondence to:** Dr Christel A. Woodward, Room 3H4, Health Sciences Centre, McMaster University, 1200 Main St W, Hamilton, ON L8N 3Z5

# References

1. Lomas J, Stoddart GL, Barer ML. Supply projections as planning: a critical review of forecasting net physician requirements in Canada. *Soc Sci Med* 1985;20(4):411-24.

2. Association of Canadian Medical Colleges (ACMC). *Canadian Medical Education Statistics*. Ottawa, Ont: ACMC; 1998. p. 20.
3. Ontario Physician Human Resources Data Centre. *Physicians in Ontario, 1997*. Hamilton, Ont: Ontario Physician Human Resources Data Centre; 1999.
4. Woodward CA, Williams AP, Ferrier B, Cohen M. Time spent on professional activities and unwaged domestic work. Is it different for male and female primary care physicians who have children at home? *Can Fam Physician* 1996;42:1928-35.
5. Grant L, Simpson LA. Gender, parenthood, and work hours of physicians. *J Marriage Fam* 1990;52:39-59.
6. Canadian Medical Association. *Women in medicine: the Canadian experience*. Ottawa, Ont: Canadian Medical Association; 1996.
7. McKendry R. *Physicians for Ontario: Too many? Too few? For 2000 and beyond*. Toronto, Ont: Ministry of Health and Long-Term Care; 1999.
8. Woodward CA, Cohen M, Ferrier BM, Williams AP. *A profile of Ontario family physicians early in their careers: gender differences and policy implications* [monograph]. Hamilton, Ont: McMaster University; 1996. p. 72.
9. Sheridan M, Sunter D, Dwerty B. The changing workweek: trends in weekly hours of work. *Canadian Economic Observer*. Ottawa, Ont: Statistics Canada; 1996 Sept. Catalog No. 11-010-XPB, 3.1-3.21.
10. Sunter D, Morrisette R. The hours people work. In: *Perspectives*. Ottawa, Ont: Statistics Canada; 1994 Aug. Catalog No. 75-001E, 8-13.
11. Buske L. Gradual decrease in MD workload. *Can Med Assoc J* 1997;156:328.
12. Buske L. *Special runs from the CMA Physician Survey 1999*. Ottawa, Ont: Canadian Medical Association; 1999.
13. Cohen M, Ferrier BM, Woodward CA, Brown J. Reaction to health care system reform by a cohort of Ontario family physicians. *Can Fam Physician*. In press.
14. Woodward CA, Cohen M, Ferrier BM, Brown J. *Changes over time in attitudes towards health policy options. CHEPA Working Paper Series*. Hamilton, Ont: McMaster University; 2000. No. 00-10.
15. Karasek RA, Theorell T. *Healthy work: stress productivity and the reconstruction of working life*. New York, NY: Basic Books; 1990.
16. Harrington J. Working long hours and health. *BMJ* 1994;308:1581-2.
17. Shields M. Long working hours and health. *Health Rep* 1999;11(2):33-48.
18. Wilkins K, Bendet MP. Work stress and health. *Health Rep* 1998;10(3):47-62.
19. Barnett RC, Gareis KC, Brennan RT. Fit as a mediator of the relationship between work hours and burnout. *J Occup Health Psychol* 1999;4(4):307-17.
20. Sobeck NW, Justice AC, Hinze S, Chirayath HT, Lasek RJ, Chren MM, et al. When doctors marry doctors: a survey exploring the professional and family lives of young physicians. *Ann Intern Med* 1999;130(4):312-9.